REMARKS

This Amendment is in response to the Office Action dated December 14, 2006. Claims 1 and 3-14 are pending. Claims 1 and 3-14 are rejected. Claims 1, 7, 12 and 13 have been amended for clarity. Support for these amendments are found generally throughout the specification and specifically at page 5, line 10, through page 6 line 2. Accordingly, claims 1 and 3-14 remain pending in the present application. No new matter has been added.

For the reasons set forth more fully below, Applicant respectfully submits that the present claims are allowable. Consequently, reconsideration, allowance and passage to issue of the present application are respectfully requested.

Specification

The Examiner states,

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP§608.01(o). Correction of the following is required: "claim 13 recites the term "USB root hub" however, the terminology is not found in the specification.

Applicant has amended claim 13 to eliminate the term "root hub" to provide the proper antecedent basis for the claim. However, Applicant respectfully submits that the term root hub in the context of a USB interface is well known. For example, referring to USB Serial Bus Specification 2.0, dated April 27, 2000

1. Section 4.1 A USB system is made up of three definitional areas; USB interconnects ("hubs"), one USB host, and multiple USB devices. Section 4.1.1.2 - A USB device can either be a USB Hub or a USB function. (Copy Attached)

2. See Definitions in Chapter 2, Figure 4-1, and Section 4.1.1.1. "Root Hub" (copy attached) is a standard USB term. All entities connected to the USB system are done via a hub connection. Thus the USB host at Tier 1 of the USB system is connected via one or more hubs (i.e. "root hubs") to other USB devices existing at Tier 2 on up.

Accordingly, Applicant respectfully submits that this term is well known and is inherently described in the present application.

Claim Rejections – 35 USC §112

Responsive to this rejection, Applicant has amended claim 5 in accordance with the Examiners suggestions. Accordingly, Applicant respectfully submits that claim 5 is now clear and definite and the rejection under 35 USC §112

Claim Rejections – 35 USC §102

Claims 1 and 3-14 are rejected under 35 USC §102(b) as being anticipated by Shu, (U.S. Patent No. 6,058,441).

The Examiner states:

12.   Referring to Claim 1, Shu teaches a single computer USB interface (item 100 in Figure 1) comprising:
a USB Root hub host port (item 11, in figure 1 and); and
a USB peripheral port (item 12 in figure 1 and) wherein the USB peripheral port and the USB root hub host port are both active at the same time (see lines 23-27 of column 5, note the upstream and downstream devices are allowed to communicate with each other), wherein the USB root hub host port and the USB peripheral port are defined using predetermined signals (see lines 27-47 of column 3).

13.   Referring to claims 3 and 4, Shu teaches the devices can be connected in a peer-to-peer connection, or a one-to-many via the host and/or peripheral ports (see lines 44-48 of column 2, note a single device can be connected to the host or a chain of devices can be connected.

14.   Referring to claim 5, Shu teaches a device only needs one physical port via the connector (see items labeled "FUNCTION" in figure 6, each peripheral has one port for which to connect with the interface).

15.   Referring to claim 6, Shu teaches the predetermined signals comprise host differential data lines and peripheral differential data lines (see lines 27-47 of column 3).

16.   Referring to claim 7, Shu teaches a USB network comprising:
a first device, (item 100 in figure 1); the first device includes a single computer USB interface the first interface including a USB root hub port (item 11 in figure 1 and);a USB peripheral port (item 12 in figure 1 and), wherein the USB root hub host port and the USB peripheral port are defined using predetermined signals (see lines 27-47 of column 3); and
a second device for communicating with the first device (see items labeled "FUNCTION" in figure 6, each peripheral has one port for which to connect with the interface), using the predetermined signals wherein the USB

peripheral port and the USB root hub host port are both active at the same time (see lines 23-27 of column 5, note the upstream and downstream devices are allowed to communicate with each other).

17. Referring to claims 8 and 9, Shu teaches the predetermined signals are within the USB standard (see lines 27-47 of column 3).

18. Referring to claim 10, Shu teaches the first and second devices can be any of a camera, computer, PDA, laptop device, handheld device, printer, and cellular telephone (see lines 1-7 of column 4).

19. Referring to claim II, Shu teaches the predetermined signals comprise host differential data lines and peripheral differential data lines (see lines 27-47 of column 3) .

20. Referring to claim 12, Shu teaches a device comprising:
a processor (see item 20 in figure 1 and lines 48-52 of column 3) and
a single computer USB interface (item 100 in figure 1) comprising:
a USB root hub host port (item 11 in figure 1 and); and
a USB peripheral port (item 12 in figure 1 and) wherein the USB peripheral port and the USB root hub host port are both active at the same time (see lines 23-27 of column 5, note the upstream and downstream devices are allowed to communicate with each other), wherein the USB root hub host port and the USB peripheral port are defined using predetermined signals (see lines 27-47 of column 3).

21. Referring to claim 13, Shu teaches the single computer USB interface requires a connection to only one physical I/O port if the device is coupled to a device with a connector that includes a USB host port and a USB peripheral port which are defined using the predetermined signals (see items labeled "FUNCTION" in figure 6, each peripheral has one port for which to connect with the interface).

22. Referring to claim 14, Shu teaches the predetermined Page 9 signals comprise host differential data lines and peripheral differential data lines (see lines 27-47 of column 3).

Response to Arguments

Applicant respectfully traverses the above-identified rejections. Applicant will describe

with particularity the differences between the cited references and the claimed invention

hereinbelow.

Present Invention

A single USB interface is disclosed. The single USB interface comprises a USB host port coupled to a first bus to provide a connection to a first network and a USB peripheral port coupled to a second bus to provide a connection to a second network. The USB peripheral port and the USB host port are both active at the same time. The USB host port and the USB peripheral port are defined using predetermined signals. In a preferred embodiment the single USB interface is utilized in a network where at least one dual port USB (DPUSB) connector is connected to either standard USB connectors or other DPUSB connectors. By use of the single USB interface, a device in a network can act as both a host or a peripheral to other devices as well as create network peer-to-peer relationships utilizing the first and second buses. Use of DPUSB connectors also provides the opportunity of new types of devices such as memory cards and cables that will greatly increase the ease of use of many intelligent electronic devices such as cameras and PDAs.

A single USB interface in accordance with the present invention in one embodiment contains two network connections to a given computer; one that is a USB host port coupled to a first bus and one that is a USB peripheral port coupled to a second bus. Since each USB network contains only one host but may have many USB devices, the single USB interface of the recited invention results in the computer being part of two USB networks; namely, in a first network which has the computer as a host and a second network which has the computer as a device.

Argument

U.S. Patent No. 6,058,441 (Shu), describes a multi function USB device which contains multiple upstream ports, multiple downstream ports, and one multi-function USB device. Since the USB device can receive commands from an upstream USB host, the device can reconfigure

its upstream and downstream ports under control of the network host. In other words, the USB device of Shu is an intelligent USB hub. There is no description that the device can act as a USB interface which includes a USB host port coupled to a first bus and USB peripheral port coupled to a second bus wherein both ports are active at the same time, as recited in all of the independent claims 1, 7 and 12.

Shu discloses a combination of a USB Hub 10 (referred to as a USB controller) and a microprocessor 20. This combination can operate multiple USB functions depending upon an initialization process.

Shu does not disclose or suggest, multiple USB buses, connected or unconnected. Also, there is no mention in Shu of "peer-to-peer", "peer-to-peer network", or "network". Shu also does not disclose or suggest that the USB hub exists as anything else than a downstream connection from a USB host. Since by definition, (Specification 4.1.1.1) (copy attached) there can be only one USB host in any given USB bus, there is no basis for the multifunction device of Shu being anything more than a conventional USB hub combined with configurable USB devices. In Shu, a USB host is coupled to the upstream port 11, via a root hub as defined by the USB specification or through a hub of lower tier connection. Examples 1 and 2 (copy attached) illustrate the operation of the USB hub of Shu. In example 1, all connections are from an upstream port to one or more downstream ports. In example 2, a single USB network connection is provided from an upstream port to either one or more downstream ports or to/from a microprocessor.

In contrast, Examples 3and 4 (copy attached) show a single USB interface in accordance with the recited invention that include first and second USB buses. This type of USB interface is not taught or suggested in Shu either directly or indirectly.

The present invention as recited in claims 1, 7 and 12 provides for multiple USB networks systems because a single USB interface has both a USB peripheral port (which must be connected to a first USB system in Tier 2 or higher), and a USB host port (which is a second USB system in Tier 1). (Figure 4.1.1 Bus Topology) (copy attached). Accordingly, the single bus USB interface in accordance with the present invention has a host port (i.e., root hub) that is

coupled to a first bus and has a peripheral port that is coupled to a second bus, thereby allowing for the interface to be utilized with two different USB networks simultaneously.

Applicant respectfully submits therefore, that independent claims 1, 7 and 12 are allowable over the cited reference. Applicant further respectfully submits that claims 3-6, 8-11 and 13-14 are allowable because they depend from an allowable base claims.

Summary

A single USB interface in accordance with the recited invention provides standard computers with many USB networking possibilities including hardware peer-to-peer connections.

Conclusion

In view of the foregoing, it is submitted that the claims 1, and 3-14 are allowable over the cited references and are in condition for allowance. Applicant respectfully requests reconsideration and allowance of the claims as now presented.

Applicants' attorney believes this application in condition for allowance. Should any unresolved issues remain, Examiner is invited to call Applicants' attorney at the telephone number indicated below.

Respectfully submitted,

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September 5, 2007

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